

POLYGYRA DORFEUILLIANA AND BULIMULUS DEALBATUS
IN ILLINOIS*

BY FRANK C. BAKER

Several years ago Dr. George E. Ekblaw, Geologist of the Illinois State Geological Survey, collected a number of mollusks on Fountain Bluff, Jackson County, Illinois. Among these were bleached shells of two species not before reported from Illinois territory, *Polygyra dorfeuilliana* (Lea) and *Bulimulus dealbatus* (Say). As the condition of the specimens received was similar to that of many Pleistocene fossils it was thought that these hitherto exotic species to the state might be evidences of a former geographic extension northward and eastward. Fountain Bluff was visited during the 1931 field work but no specimens of these species were found. In 1932 special search was carried on at Fountain Bluff, with the result that the two species were found in one location, the same as that visited by Dr. Ekblaw, but in no other place on this bluff. *Polygyra dorfeuilliana*, however, was found in abundance on other bluffs bordering the Mississippi River. The occurrence of these two species so far from their recorded limits is deemed of enough importance to warrant special consideration.

Bulimulus dealbatus (Say). The specimens from Fountain Bluff, Union County, belong to the typical form and are not the form called *ozarkensis* by Pilsbry. Sampson, in his *Mollusca of Missouri* (Trans. Acad. Sci. St. Louis, XXII, p. 100, 1913) refers all *Bulimuli* in Missouri to the race *ozarkensis*, giving the most northern and eastern locality as Hannibal, Marion County, near the Mississippi River. This locality is opposite Adams County, Illinois, but no *Bulimuli* have been found in this region of the state. The nearest Missouri record observed for *Bulimulus* is Rivermines, St. Francois Co., about sixty miles west of the Fountain Bluff locality. It is probable that not one of the *Bulimulus* in Missouri belong to the race *ozarkensis*, which Pilsbry restricts to the

* Contribution from the Museum of Natural History, University of Illinois, No. 70, and the Illinois Natural History Survey in co-operation.

northern and western outliers of the Ozark system, including southwestern Missouri. The Fountain Bluff *dealbatus* without doubt crossed the Mississippi River from Missouri, and the species will probably be found on the Missouri side of the Mississippi River. The Illinois specimens are like Pilsbry's figure 13, plate VI, in Proc. Acad. Nat. Phil., 1906, and described on page 136 of that paper. The typical form has been collected in Kentucky, Tennessee, Alabama, and west to Kansas (Shawnee County). It is not known from Indiana and appears to reach its most northern distribution in Missouri. Although special search was made for this species in southern Illinois, in the eastern extension of the Ozarkian uplift, not a vestige of it could be found.

Fountain Bluff is an isolated outlier of erosion, four miles west of the main bluff escarpment in Illinois and separated from the Bluffs in Missouri by a mile of Mississippi River flood plain, including this stream which is here a quarter to half a mile wide. The bluff is four miles long and three-quarters of a mile wide. Its greatest elevation is about 680 feet or 320 feet above the river. The *Bulimulus* were found only on a topographic node east of the power station at a height of about 620 feet. (See the Alto Pass and Altenberg topographic sheets of the U. S. Geol. Surv.) While all of the specimens collected were without the animal, many of them retained the original color markings indicating that the owner was in possession quite recently.

Polygyra dorfeuilliana (Lea). The presence of this species in Illinois is quite surprising. The specimens are typical and like the type of Lea, supposed to come from some Kentucky locality. They are also like a specimen in the Philadelphia Academy supposed to have been received from Dorfeuille, the original collector (according to Pilsbry). The typical form has a lip-callus ending in front of the upper tooth, and this feature is well shown in the Illinois specimens, but is rare in the shells from more western localities. The distribution of *dorfeuilliana* is well shown by Pilsbry (Proc. Phil. Acad., 1906, p. 536) who indicates a wide range in Missouri and Arkansas, the nearest states to Illinois. The

Missouri locality nearest to the Illinois localities is Fern Glen, St. Louis Co. (Sampson, Trans. Acad. Sci. St. Louis, XXII, p. 99, 1913), which is only some 25 miles north of the Illinois localities and not far from the Mississippi River. In Illinois, *dorfeuilliana* was found abundantly in the area south of East St. Louis in Monroe County, from Valmeyer south to Prairie du Rocher, in Randolph County, a distance of some twenty miles. It was not found in the hills at Chester, Randolph County, and does not again appear until the Fountain Bluff region is reached, about forty miles southward. Of course, there may be isolated colonies between these points which were not found by the Illinois survey party.

The local distribution of the colonies is noteworthy. The species was extremely abundant on the bluffs bordering the Mississippi River but, as far as observed, was not found on the landward (east) side of these bluffs, in ravines or depressions in the escarpment. The dissected bluffs in this area attain a height of 740 feet or more above sea level or 350 feet above the level of the bottom land of the Mississippi River. This species does not occur until a height of about 700 feet is reached. Here it occurs on very steep inclines, buried in the earth, at the base of rock outcrops, or under debris of various sorts. The ground was literally paved with dead shells in some places. At all localities in this area the species appeared to occur under the same conditions. At Fountain Bluff, Jackson County, the species is rare and is found only in one place in company with *Bulimulus dealbatus*. Here the colony is dying out, or may be already extinct, since only bleached, empty shells could be found. *P. dorfeuilliana* is now known to occupy a strip of territory about seventy miles in length bordering the Mississippi River, from Monroe southward to Jackson County.

In spite of the presence of this species in western Illinois, its occurrence in Kentucky is still an anomaly, especially as far east as the Cincinnati region. The Illinois colonies undoubtedly came across the Mississippi River from eastern Missouri, a fact strengthened by the presence of the species

in St. Louis County, Mo. As far as known it is not found in northeastern or eastern Arkansas. There is a gap of more than 300 miles between the supposed type locality and the nearest eastward range in Illinois. The species positively does not occur in any part of eastern or southern Illinois, for the writer and two other competent zoologists (Dr. Van Cleave and Mr. Foster) have collected in this area during three seasons, 1930-32, thus eliminating the possibility of a migration across southern or central Illinois. Further, it has not occurred in any of the very abundant fossil exposures studied by the Illinois State Geological Survey. It appears probable, therefore, that Dr. Pilsbry's statements in Proc. Phil. Acad., 1906, pp. 537, 538, still hold true and the solution of the Kentucky locality record is still as far away as before. If the species lives in either Kentucky or Tennessee at the present time it surely would have been found by the efficient collectors who have searched this prolific area for its land snail fauna.

I am indebted to Dr. H. A. Pilsbry for verifying the identifications of the two species in question, to Mr. Thural Dale Foster for assistance in collecting the material, and to Dr. T. H. Frison, Chief of the Illinois State Natural History Survey for the opportunity of collecting and studying the material.

MOLLUSKS OF MOOSE FACTORY

BY CALVIN GOODRICH

Scattered through Dall's report on the land and fresh water mollusca of Alaska are references to Moose Factory, the old Hudson's Bay Company's post at the head of James Bay. Twenty-seven species are credited to the locality. The collections that Dall examined were no doubt made by several travelers and the name Moose Factory was meant, in some instances, to cover an area of several hundred square miles.